

Appendix A

Examples

1.0 Modification of precedent – TSTF Travelers (DC power & End States)

DC Power: The Technical Specification Task Force (TSTF) submitted TSTF-360 (DC Electrical Rewrite) for NRC Staff review in the late 1990s. The TSTF submitted TSTF-360 Rev. 1¹ on November 6, 2000 to incorporate the results of several technical discussions with the Staff. NRC approved Rev. 1 on December 18, 2000.² However, in 2006, the Staff identified new concerns³ with TSTF-360. The Industry and the Staff were not able to reach a mutually acceptable resolution of the Staff's concerns. The Staff did not perform a Regulatory Analysis of its revised position on the acceptability of TSTF-360. NEI believes there should be a more rigorous process for updating approved Travelers and the associated NRC safety evaluations based on new information. The process should include participation by all stakeholders.

End States: The NRC approved TSTF-423⁴, "Technical Specifications End States, NEDC-32988-A," on March 23, 2006. The approval was published in the Federal Register as a [CLIIP Notice of Availability](#).⁵ Two plants received license amendments adopting the change. However, other licensees were advised that LARs based on TSTF-423 could not be approved unless they conformed with [Administrative Letter 98-10](#)⁶, "Dispositioning Of Technical Specifications that are Insufficient to Assure Plant Safety." In one case the Staff declined to accept a change in end state for primary containment, even though that change had been approved in the Staff's review of Topical Report NEDC-32988-A and again in the Staff's review of TSTF-423. The Staff no longer finds TSTF-423 acceptable. This is a significant change that the Staff implemented unilaterally without stakeholder participation or a regulatory analysis.

2.0 Modification of precedent – TORMIS

Some licensees have identified exposed exhaust ductwork or piping that is not protected against tornado missiles. This is an apparent discrepancy between the as-built plant and the current licensing basis. The options for corrective action are (1) plant-specific evaluations to exclude the components from the design basis for tornado missile protection (using the EPRI TORMIS⁷ computer code or some other methodology), or (2) modify the plant to either eliminate or protect the components. Option 1 is preferred because NRC has published a safety evaluation⁸ of TORMIS, and there have been a number of precedent approvals at other plants^{9,10,11,12,13}. However, recent LARs based on TORMIS precedent have not been successful. There is no stable licensing process for the identification and use of precedent-setting Staff SEs.

3.0 Modification of precedent – NUMARC 8700 (SBO)

A 2005 inspection report¹⁴ cited a licensee for "...failure to establish a target reliability for the plant's alternate power source consistent with the reliability approved by NRC staff in the licensee's Station Blackout submittal for 10 CFR 50.63." The NRC staff concluded that the licensee's methodology (based on NRC-endorsed NUMARC 87-00, rev. 1¹⁵) was "non-conservative" and represented a performance deficiency. Region findings of this type should be referred to NRC headquarters for evaluation as generic issues.

4.0 Reinterpretation – Shutdown as a conservative alternative to an LCO Action Statement

In October 2005, a licensee entered a Tech Spec action statement due to a blown fuse. The licensee determined that plant shutdown was a conservative alternative to implementing the action statement. Taking the more conservative action is standard industry practice that has been evaluated and accepted by NRC and is consistent with the format and usage rules for implementing the improved Standard Technical Specifications (ISTS). Nevertheless, the NRC issued a non-cited violation (NCV). The licensee denied the violation (without success) based on inconsistency with past NRC practice.

5.0 Reinterpretation – Scope of Limiting Safety System Settings

Since the "setpoints" issue first emerged in approximately 2004, the NRC staff has been adjusting its position on what constitutes compliance with 10 CFR 50.36(d)(1). First it was an "ISA Method 3" issue, then a calibration issue, and now an "LSSS scope" issue. NEI submitted two technical reports^{16,17} in defense of its opposing position with respect to methodology and calibration requirements, but NRC declined to review them. The Tech Spec Task Force then submitted TSTF-493¹⁸ to address the NRC staff's concerns, but that review remains incomplete. Recently, the staff concluded that all automatic functions in the TS that mitigate Anticipated Operational Occurrences (AOOs) or Design Basis Accidents (DBAs) could be considered limiting safety system settings (LSSS).¹⁹ The regulatory mandate in 10 CFR 50.36 on protecting Safety Limits applies only to AOOs. This is a significant change that the staff has implemented unilaterally without stakeholder participation or a regulatory analysis.

6.0 Reinterpretation – Reportability of loss of shutdown cooling as a loss of safety function

The Staff documented an interpretation of the reporting requirements of 10 CFR 50.73(a)(2)(v)(B) in a 2005 Inspection Report²⁰. Regional Utility Group (RUG) IV submitted a letter²¹ to NRC documenting its disagreement with the Staff's interpretation. NRC Region IV reaffirmed its interpretation in a letter²² to the RUG IV chairman. Industry continues to disagree with the staff's conclusion, which has significant generic implications regarding performance indicators. The licensee and RUG IV have referred the matter to the NEI Licensing Action Task Force for further evaluation and communication with NRC.²³

7.0 Reinterpretation – Entry into a Mode when an LCO is not met

Based on NRC Task Interface Agreement (TIA) 2008-002, the NRC cited a licensee for not having adequate procedures to ensure that actions required by LCO 3.0.4.a (entry into a Mode when an LCO is not met) were completed prior to a Mode transition. The Industry disagrees with the staff's conclusion for reasons stated in a July 17, 2008 letter²⁴ from the Technical Specification Task Force to the NRR Division of Inspection and Regional Support. This is a generic issue that could affect many licensees and should be developed with stakeholder participation.

8.0 Plant-specific issue with generic applicability – CDBI findings on EDG frequency Tech Specs

Identical CDBI findings pertaining to the Tech Spec surveillance requirements on emergency diesel generator (EDG) frequency have been documented at several plants²⁵. The typical TS surveillance criterion for EDG frequency is $\pm 2\%$ of the 60 Hz nominal frequency (i.e., 58.8 Hz to 61.2 Hz) as recommended in Regulatory Guide 1.9²⁶. Typically, licensees do not analyze at the extremes of the frequency range. The industry position is (1) the use of nominal values within a standard tolerance is typical, accepted practice in electrical engineering, and (2) plant procedures do not permit operation at the extremes for extended periods of time. However, the NRC staff has taken the position, through CDBI inspection reports, that either a plant-specific analysis must be performed to support steady state operation at the extremes, or the TS surveillance should be changed to limit such operation. NEI recommends that NRC perform a regulatory analysis of this interpretation.

9.0 Plant-specific issue with generic applicability – Treatment of uncertainties (UHS temperature)

The Staff cited a licensee for failure to demonstrate conservative acceptance criteria for uncertainties in ultimate heat sink (UHS) temperature instrumentation. NEI recommends that NRC perform a regulatory analysis. This is a generic issue that could affect many licensees and should be developed with stakeholder participation.

10.0 Preemption of 10 CFR 50.59 – CASMO computer code

After performing the necessary 10 CFR 50.59 review, a licensee planned to use an updated computer code without prior NRC approval. The NRC staff was aware of the licensee plan and advised the licensee that the updated code could not be implemented without prior NRC approval. The staff's position is contrary to Generic Letter 83-11²⁷, NEI 96-07²⁸, and Regulatory Guide 1.187²⁹. Licensees cannot be preempted from using 10 CFR 50.59.

11.0 Treatment of guidance as a requirement – Rod drop analysis fuel enthalpy limit

The calculated fuel enthalpy reported in a licensee's EPU LAR³⁰ was 234 cal/gm, well below the 280 cal/gm limit in the plant-specific licensing basis and SRP 4.2 (Rev. 2)³¹. However, the Staff review imposed a more restrictive 230 cal/gm limit based on a Staff paper published in an industry journal and on other unpublished internal documents. Licensees should be able to rely on criteria in durable

guidance documents such as the SRP. In this case, the Staff should have considered the reported value on its merits and not rejected it because it exceeded an unofficial limit by a small amount. (Note: the 230 cal/gm limit has since been published in Rev. 3 of SRP 4.2).

12.0 Treatment of guidance as a requirement – SDP for performance deficiencies (TI 2515/167)

The NRC staff issued an Inspection Manual Temporary Instruction (TI 2515/167³²) to confirm continued industry implementation of voluntary shutdown initiatives described in NUMARC 91-06³³ and Generic Letter 88-17³⁴. The TI enables the staff to classify the failure to implement NEI 91-06 as a performance deficiency subject to the significance determination process (SDP) and PRA analysis. This represents a use of the inspection process to bypass the rulemaking process and establish non-mandatory guidance as a de facto requirement.

13.0 Treatment of guidance as a requirement – Dry storage cladding temperature limits (ISG-11)

10 CFR 72 does not contain a fuel cladding temperature limit. NRC staff guidance on this topic is contained in NUREG-1536³⁵. Interim Staff Guidance (ISG) 11 pertains to spent fuel cladding temperature limits during dry storage and transportation. ISG-11 Rev. 2³⁶ established a fuel cladding temperature limit of 400C (752F) for normal storage conditions and expanded the definition of normal conditions to include short-term normal operations, such as vacuum drying. Historically, casks have been licensed with a higher fuel cladding temperature limit for short-term operations. A lower cladding temperature limit for vacuum drying conditions obliges the holder of a cask Certificate of Compliance (CoC) to require licensees to use new cooling procedures and equipment to meet the revised temperature limit. NEI recommends that guidance of this type be subject to a regulatory analysis. It represents a generic issue that could affect many licensees and should be developed with stakeholder participation.

14.0 Acceptance conditioned on a commitment – Setpoints and allowable values (RIS 2006-17)

During the acceptance review of an EPU LAR³⁷, the Staff advised the licensees that it would not be accepted without a commitment to follow the setpoint guidance in RIS 2006-17³⁸. This makes the "guidance" in the RIS a de facto requirement. It is also inconsistent with guidance in LIC 101³⁹ that Staff should not use information requests to obtain commitments.

15.0 Acceptance conditioned on a commitment – Ultrasonic flow meter (RIS 2007-24)

The NRC has approved several LARs to increase rated power by utilizing Ultrasonic Flow Meters (UFMs) to increase the accuracy of the power measurement. Until recently, the NRC Staff accepted that UFMs were not included in the TS because they are not credited in the safety analysis. However, the Staff has changed its position and now expects to see UFM TS in power uprate amendments that rely on the technology. In addition, Industry does not believe the staff's proposed model Technical Specification is consistent with ISTS format and usage rules. The issue remains open after several discussions with the Staff.

16.0 Acceptance conditioned on a commitment – Operability with degraded voltage (IN 2007-09)

A licensee's LAR⁴⁰ had been under review for approximately one year at the time the NRC published Information Notice 2007-09⁴¹. The Staff determined that the LAR could not be approved unless it addressed the IN. The licensee withdrew the LAR.⁴² This is an example of a lower tier generic communication decreasing the efficiency of a regulatory review. The LAR could have been approved conditional on a follow-up LAR to address the IN.

17.0 RAI scope exceeds CLB – TS change to conform with a 10 CFR 50.59 modification

A licensee modified the containment sump under 10 CFR 50.59 and submitted an LAR⁴³ to revise the Tech Spec surveillance requirements to conform to the design. The LAR was based on precedent set by other plants. The Staff asked several questions^{44,45} about missile protection, jet impingement, dynamic loading, structural design, and the performance of containment sump strainers and screens that went well beyond the scope of the proposed surveillance requirements. The licensee answered the questions because it needed the amendment in support of continued operation.

18.0 RAI scope exceeds CLB – Steam generator inspections reports are not licensing actions

Licensees are being asked to answer RAI questions on summary reports of steam generator inspections results. These reports are not licensing actions. Some of the questions are information gathering, and others could be answered verbally during the inspections. The RAI process should not be used for routing information requests.

19.0 LAR review scope – Re-review of approved methods that were not affected by an LAR

A licensee submitted an LAR in support of steam generator replacement. The LAR included the results from the reanalysis of postulated accidents using NRC-approved methods in accordance with the CLB. The NRC staff use the RAI process to open previously approved licensing basis methods for re-review. Apparently, some NRC staff members believe that an LAR opens the entire CLB to re-review. Industry believes that the only part of the CLB subject to re-review is the part within the scope of the proposed change.

20.0 LAR review scope – Addition of SBO requirements beyond the scope of an EPU LAR

A licensee submitted an LAR for a small power uprate. The LAR was similar to a previously approved LAR for another unit at the same site. NRC issued a request for additional information (RAI) asking the licensee to change the plant's station blackout coping duration from 4 hours to 16 hours. This was a substantial change to the plant-specific licensing basis that was unrelated to the licensee's request. The NRC Staff used a time-sensitive LAR to leverage a new position. The licensee was obliged to trade off its reluctance to change a compliance strategy (station blackout coping duration) with its need for the uprate amendment.

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- ¹ See reference **Error! Bookmark not defined.**
- ² U.S. Nuclear Regulatory Commission, NRC letter to NEI (W. D. Beckner to A. R. Pietrangelo), December 18, 2000.
- ³ U.S. Nuclear Regulatory Commission, Notice of Public Meeting, July 12, 2006.
- ⁴ See Reference **Error! Bookmark not defined.**
- ⁵ Federal Register, 71 FR 14726, "Notice of Availability of Model Application Concerning Technical Specifications for Boiling Water Reactor Plants to Risk-Inform Requirements Regarding Selected Required Action End States Using the Consolidated Line Item Improvement Process," March 23, 2006.
- ⁶ U.S. Nuclear Regulatory Commission, Administrative Letter 98-10, "Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety," December 29, 1998.
- ⁷ See Reference **Error! Bookmark not defined.**
- ⁸ U.S. Nuclear Regulatory Commission, NRC Memorandum (L. S. Rubenstein to F. J. Miraglia), "Safety Evaluation Report – Electric Power Research Institute (EPRI) Topical Reports Concerning Tornado Missile Probabilistic Risk Assessment (PRA) Methodology," October 26, 1983.
- ⁹ U.S. Nuclear Regulatory Commission, "Amendment No. 90 to Facility Operating License No. NPF-58 – Perry Nuclear Power Plant, Unit 1," November 4, 1977.
- ¹⁰ U.S. Nuclear Regulatory Commission, "Issuance of Amendment – Clinton Power Station Unit 1," February 29, 2000.
- ¹¹ U.S. Nuclear Regulatory Commission, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Issuance of Amendments," November 17, 2000.
- ¹² U.S. Nuclear Regulatory Commission, "Joseph M. Farley Nuclear Plant, Units 1 and 2 Re: Issuance of Amendments," September 26, 2001.
- ¹³ U.S. Nuclear Regulatory Commission, "Waterford Steam Electric Station, Unit 3 – Issuance of Amendment Re: Partial Approval of Request Associated with the Ultimate Heat Sink Dry Cooling Tower Fans," September 28, 2006.
- ¹⁴ U.S. Nuclear Regulatory Commission, Inspection Report 05000305/2005002, for the period January 24 – February 18, 2005.
- ¹⁵ See Reference **Error! Bookmark not defined.**
- ¹⁶ Nuclear Energy Institute, Letter to NRC (A. Marion to E. Leeds), "ISA 67.04 Methods for Determining Trip Setpoint and Allowable Values for Safety-Related Instrumentation," December 5, 2003.
- ¹⁷ Nuclear Energy Institute, Letter to NRC (A. Marion to J. Lyons), independent MPR review of NEI white paper (December 5, 2003) and NRC problem statement (June 17, 2004) on setpoints and allowable values for safety-related instrumentation," December 17, 2004.
- ¹⁸ Tech Spec Task Force Traveler, TSTF-493, Rev. 3, "Clarify Application of Setpoint Methodology for LSSS Functions," January 18, 2008.
- ¹⁹ U.S. Nuclear Regulatory Commission, Staff Memorandum (ADAMS Accession Number ML081260433), May 8, 2008.
- ²⁰ U.S. Nuclear Regulatory Commission, Inspection Report, "Columbia Generating Station – NRC Integrated Inspection Report 05000397-2005004," November 7, 2005.
- ²¹ Regional Utility Group IV, Letter to NRC, February 28, 2006.
- ²² U.S. Nuclear Regulatory Commission, Region IV letter to RUG IV, "Implementation of NUREG-1022 Revision 2 Guidance Regarding the Reportability of Loss of Shutdown Cooling," May 8 2006.
- ²³ Energy Northwest, Letter to NRC (D. K. Atkinson to NRC Document Control Desk), May 26, 2004.
- ²⁴ Technical Specification Task Force, Letter to NRC (BWROG/PWROG Chairmen to F. D. Brown), NRC Technical Specification Branch Positions Inconsistent with the Improved Standard Technical Specifications," July 17, 2008.
- ²⁵ Nuclear Energy Institute, Table of CDBI Findings on EDG Frequency, January 25, 2008.
- ²⁶ U.S. Nuclear Regulatory Commission, [Regulatory Guide 1.9](#), "Application and Testing of Safety-Related Diesel Generators in Nuclear Power Plants," Rev. 4, March 2007.
- ²⁷ U.S. Nuclear Regulatory Commission, Generic Letter 83-11, "

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- ²⁸ Nuclear Energy Institute, NEI 96-07, "
- ²⁹ U.S. Nuclear Regulatory Commission, Regulatory Guide 1.187, "
- ³⁰ Tennessee Valley Authority, Letter to NRC (T. E. Abney to Document Control Desk), "Browns Ferry Nuclear Plant (BFN) – Units 2 and 3 – Proposed Technical Specifications (TS) Change TS-418 – Request for License Amendment Extended Power Uprate (EPU) Operation," June 25, 2004.
- ³¹ U.S. Nuclear Regulatory Commission, NUREG-0800, Standard Review Plan, Section 4.2, Rev. 2, "Fuel System Design," July 1981.
- ³² U. S. Nuclear Regulatory Commission, Inspection Manual, Temporary Instruction 2515/167, "Assurance of Industry Implementation of Key Shutdown Voluntary Initiatives."
- ³³ Nuclear Utility Management and Resource Council, NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," December 1991.
- ³⁴ U.S. Nuclear Regulatory Commission, [Generic Letter 88-17](#), "Loss of Decay Heat Removal," October 17, 1988.
- ³⁵ U.S. Nuclear Regulatory Commission, [NUREG-1536](#), "Standard Review Plan for Dry Cask Storage Systems," January 1997.
- ³⁶ See Reference **Error! Bookmark not defined..**
- ³⁷ Nuclear Management Company (now Xcel Nuclear), Monticello Nuclear Generating Plant, "License Amendment Request: Extended Power Uprate," March 31, 2008.
- ³⁸ U.S. Nuclear Regulatory Commission, [RIS 2006-17](#), "NRC Staff Position on the Requirements of 10 CFR 50.36, 'Technical Specifications,' Regarding Limiting Safety System Settings During Periodic Testing and Calibration of Instrument Channels," August 24, 2006.
- ³⁹ See Reference **Error! Bookmark not defined..**
- ⁴⁰ South Carolina Electric & Gas, Virgil C. Summer Nuclear Station, "Changes to Emergency Diesel Generator Specification" November 21, 2006.
- ⁴¹ U.S. Nuclear Regulatory Commission, [Information Notice 2007-09](#), "Equipment Operability Under Degraded Voltage Conditions," March 26, 2007.
- ⁴² South Carolina Electric & Gas, Virgil C. Summer Nuclear Station, "Withdrawal of License Amendment Request," October 25, 2007.
- ⁴³ Entergy Nuclear Operations, Inc., Letter to NRC (C. J. Schwarz to Document Control Desk), Palisades Nuclear Plant, "License Amendment Request: Emergency Core Cooling System Surveillance Requirement," April 18, 2007.
- ⁴⁴ Entergy Nuclear Operations, Inc., Letter to NRC (C. J. Schwarz to Document Control Desk), Palisades Nuclear Plant, "Response to Request for Additional Information Regarding License Amendment Request for Emergency Core Cooling Systems Surveillance Requirement," July 16, 2007.
- ⁴⁵ Entergy Nuclear Operations, Inc., Letter to NRC (C. J. Schwarz to Document Control Desk), Palisades Nuclear Plant, "Response to Request for Additional Information Regarding License Amendment Request for Emergency Core Cooling Systems Surveillance Requirement," September 20, 2007.